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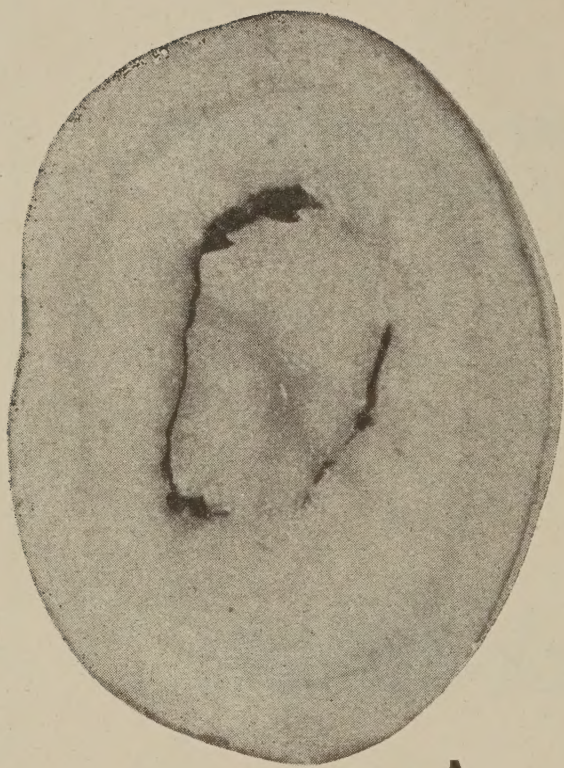
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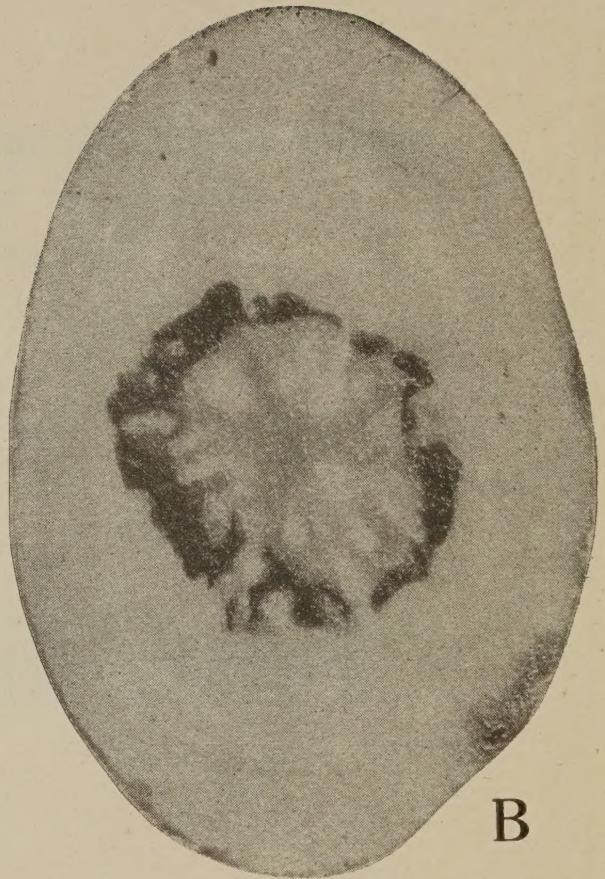
UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
WASHINGTON, D. C.

Potato Black-Heart.





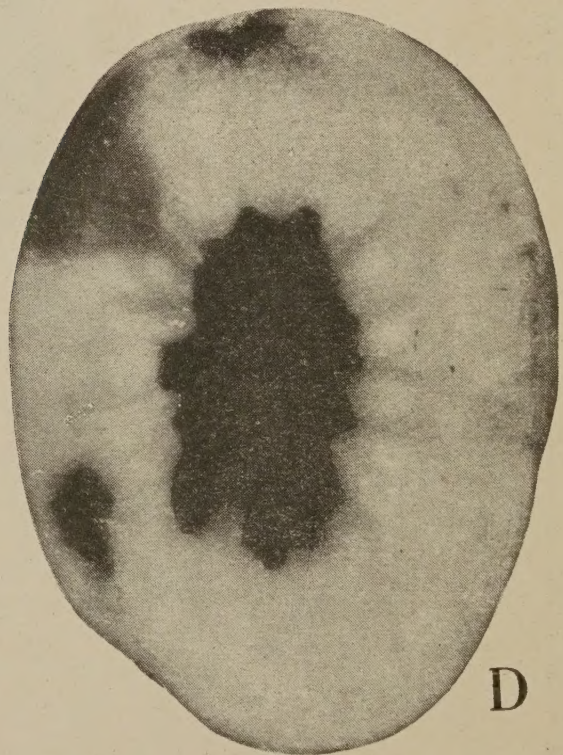
A



B



C



D

FIG. 1.—Black-heart of the potato: A, Black ring with inclosed tissue not discolored; B, black ring with inclosed tissue gray colored; C, black streak in center (very common); D, black center with radiations to surface, frequent in potatoes that have been overheated and not provided with enough air.

POTATO BLACK-HEART.

DURING THE WINTER, when potatoes have to be shipped in stove-heated cars during freezing weather, there is danger of serious injury or complete loss from overheating, which produces the effect known as "black-heart" (fig. 1).

The center of the potato is jet black, quite moist, and flabby. The discoloration may occur as a ring in the center of the tuber, inclosing a gray or black area. In advanced cases, the tubers show hollow, black-bordered cavities in the center. The discoloration progresses outward, and whenever it reaches the outside a rapid decay sets in.

Black-heart is produced when potatoes are heated to 90° to 104° F. for a few hours or stored at lower temperatures in piles deeper than 6 feet without ventilation from the sides or bottom. Temperatures of 90° to 104° F. are not infrequent in cars that are started out during very cold weather, fired, and then delayed in transit or unloading until unseasonably warm weather sets in suddenly or in cars that pass from a zone of very cold weather into one of warm weather. Overheating or lack of ventilation in cellars is equally effective in bringing about black-heart.

Affected tubers are unfit for human food. An affected consignment is not marketable and can not be stored without risk of rapid decay.

Injury of this type can be reduced by closer attention to the firing of the stoves, to the loading of the cars, and to proper provision for air circulation within the cars.¹

A false floor and false end walls should be used, in order to permit the free movement of large volumes of heated air to the bottom of the load. In cars constructed with end ice bunkers, false end walls are not necessary. The potatoes should never be loaded in such a way that the circulation of the heated air from the stove to the ceiling, over the top of the load, and under the false floor will be cut off at any point. They should not be loaded closer to the stove than 3 feet, and should be protected from the direct heat of the stove by a sheet of asbestos or other nonconducting material.

Approved:

WM. A. TAYLOR,
Chief of Bureau.

MARCH 8, 1918.

¹ Description of method of loading contributed by the Bureau of Markets.

